Atty Ref. No: S0002-US02

REMARKS/ARGUMENTS

Applicants have observed that the Abstract exceeded 150 words in length. An amended Abstract has been provided that is believed to be consistent with current requirements.

Applicants acknowledge the examiner's recognition that applicants have filed an information disclosure statement and respectfully request a copy of the submitted form 1449 reflecting the examiner's review of the submitted material.

Claim Rejections - 35 USC § 112

The examiner has rejected claims 6-8 under 35 USC § 112 on the grounds that "feedback loop" might be ambiguous, but has correctly interpreted the language in view of the specification for purposes of examination. By the current amendment to claim 1, further discussed below, it is clear that a fluid flow feedback loop is intended both in claim 1 and in dependent claims 6-8. This grounds for rejection should be withdrawn.

Claim Rejections - 35 USC § 102

Claims 1, 2, 5, 6, 8, 11, 12, 15-20, 23 and 26-28 are rejected under 35 USC §102(e) as anticipated by Peterson et al (US 6,228,255). Claims 1, 2, 5-8, 11-18 and 23-27 are also rejected under 35 USC § 102(b) as anticipated by Faynor et al. (US 3,870,033). In view of the current amendments to claims 1, 15 and 26 (the independent claims in the case) both rejections can be treated at the same time. New claims are also presented herewith. No new matter has been added by these amendments. For example, claims 1, 15 and 26 find support at page 8, lines 15-8, page 9, lines 8-12, page 9, line 30- page 10, line 10 and page 11, lines 13-26. Claim 6 is supported at page 9, lines 4-5; Claim 32, at page 16, lines 23-28; Claim 33, at page 15, line29 - page 16, line 2; Claims 34 and 35, at page 16, lines 9-12; Claim 36, at page 16, line 23-28; Claim 37, at page 19, lines 8-9; Claim 38 at page 16, lines 21-25; Claim 39, at page 11, lines 13-17 and page 13, line 18; and Claim 40 finds support at page 10, lines 20-24.

Applicants' invention is essentially a fluid control sub-system that isolates a relatively low volume, relatively constant flow fluid source from devices that require high volume, intermittent

fluid flow. One aspect of the invention isolates the fluid source, or main water system, from the demands of the down stream devices. This function may be provided by a flow control valve, which may be combined with a check valve or a volume control or both. This limits the fluid demands placed on the main water system and prevents fluctuations in the water pressure in the main system by reason of the down stream devices' demands for fluid.

Another important aspect of applicant's invention is the provision of high volume, intermittent flow to down stream devices. Dialysis machines are sensitive to variations in fluid pressure. Changes in pressure differentials across filter membranes change the filter characteristics. Constant pressure is therefore important in such devices. Applicants provide such high-volume, constant-pressure flow independent of main supply pressure and flow by uncoupling the sub-system as described above and by providing parallel fluid feedback loops, meaning by "parallel" that both of the fluid lines or paths originate at a common location (e.g., the high pressure side of the pump) and return to a common location (e.g., the tank), as shown and described in the specification. One of the loops, the supply line, supports the high fluid volume devices in series and the other loop, the shunt feedback loop, is pressure controlled, thus setting constant pressure in both loops. As the devices place increasing demands on the sub-system for more fluid volume, the pressure in both loops drops. The pressure control in the shunt feedback loop closes the flow through that loop in an attempt to raise the pressure. This diverts flow from the shunt feedback loop to the supply line, providing the additional volume needed by the devices at a substantially constant pressure.

The subsystem can be used to effectively and economically upgrade a purified water supply in, for example, a hospital, so that the main system can support localized high-volume, intermittent-use devices without compromising pressure and flow throughout the system.

Peterson et al shows a series of devices in a water treatment system, including tanks and various other components. Several sensors measuring water temperature, pH, flow rate, and pressure are shown, as is a pressure regulation valve prior to a feed water booster pump. Peterson et al. does not show a storage tank having an inlet for connection to a main water supply with a flow valve connected to the inlet. Peterson et al. is not concerned with the potentially deleterious demands of a large storage tank or of high-volume devices on the fluid line pressure in a main water system. Therefore prior to Carbon Tank 1 or Carbon Tank 2 (and after) Carbon Tank 2) pressures are measured to monitor the effectiveness of the processes taking place in

those tank.. Similarly, the output pressure of circulation pump 128, which precedes the storage tank 124, is measured , but one is not controlling the inflow to the storage tank from the main water system. If the circulation pump is considered part of the "main water system", the other limitations of claim 1 cannot not met by Peterson et al.

Similarly, Faylor et al. does not show flow control from the main water supply prior to the storage tank. No such device is shown between the municipal water input 30 and the entire system. Neither is a flow control valve shown between the pre-treatment part 22 and the storage 24. Faylor, like Peterson, is simply not concerned with loss of pressure in the main water system arising from the demands of the subsystem.

In addition, neither Faynor nor Peterson show both a supply line feedback loop and a shunt feedback loop with a pressure control valve in the shunt feedback line. As explained above, this structure allows the subsystem to rapidly respond to large-volume intermittent demands for fluid flow without burdening the main water system. Claim 1, as currently amended, should be allowed. Claims 2-14 should be allowed with their parent claim.

Similar consideration apply to independent claims 15 and 26. These claims should be allowed with their dependant claims 16-25 and 27-32 respectively.

Newly presented claims 33-40 each further distinguish over the art of record. Claims 33-35 further distinguish the inlet and control of fluid flow into the tank. Claims 36-38 distinguish the claimed invention with respect to uncoupling the inlet and re-coupling the inlet into other lines, forming a closed system for disinfect ion of the system and provide for easy access to the tank through a disinfectant inlet port. Claim 39 places a pressure sensor in conjunction with the pressure valve in the shunt feedback loop. Claim 40 specifies a filtered vent in the tank. Each of these claims should be allowed.

Claim Rejections - 35 USC § 103

Claims 9 and 10 are rejected under 35 USC 103(a) over Peterson et al. '255 in view of Kenley et al. 5,283,072 (sic: 5,783,072). In addition to the limitations of claim 1, discussed above, claims 9 and 10 now depend from new claim 34, which requires a volume control device in the tank. The spray heads of claims 9 and 10 are not for mixing or scrubbing as described in Kenley, but for agitating the surface of the fluid to inhibit bacteriological growth. The volume

control device keeps the surface of the water below the spray heads. This combination is not shown in Kenley et al. Claims 9 and 10 should be allowed.

Applicants note that when the examiner referred to Peterson et al. patent 6,231,199, or to Peterson et al 6,235,197, the examiner is believed to have meant patent 6,235,199 to Peterson et al.

Claim 32 is rejected over Peterson et al. '255 in view of Peterson et al. '197 (sic: 6,235,199). Applicants respectfully suggest that the references do not show disconnecting the inlet from the main water system and connecting the inlet to a high-pressure side of the pump. See also new claims 36-38.

In view of the forgoing amendments to the specification (abstract) and the claims, it is believed that all outstanding matters have been addressed and that the case is in condition for allowance. The examiner's reconsideration of the case is, therefore, earnestly solicited. If the examiner believes a telephone conference would advance the prosecution of the case, the examiner is urged to call the undersigned attorney.

Respectfully submitted,

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Date

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